## **Montana Board of Oil and Gas Conservation**

## **Environmental Assessment**

Operator: Continental Resources, Inc. Well Name/Number: Sharon 1-3H

Location: SE SW Section 3 T25N R55E
County: Richland , MT; Field (or Wildcat) W/C (Bakken Horizontal)
Air Quality
(possible concerns)
Long drilling time: No, 30 to 40 days drilling time.
Unusually deep drilling (high horsepower rig): No, triple derrick drilling rig to drill to
19,987'MD/10,018'TVD, single lateral horizontal Bakken Formation well
Possible H2S gas production: Slight chance H2S gas production.
In/near Class I air quality area: No Class I air quality area.
Air quality permit for flaring/venting (if productive): Yes, DEQ air quality permit required
<u>under 75-2-211.</u>
Mitigation:
_X Air quality permit (AQB review)
x Gas plants/pipelines available for sour gas
Special equipment/procedures requirements
Other:
Comments: No special concerns – using triple rig to drill to
19,987'MD/10,018'TVD, single lateral horizontal Bakken Formation well.
Water Quality
(possible concerns)
Salt/oil based mud: Yes, freshwater and freshwater mud system on surface hole and oil
based invert drilling fluids for intermediate casing hole. Brine water will be used for the
horizontal lateral.
High water table: No high water table anticipated.
Surface drainage leads to live water: No, closest drainages are unnamed ephemeral
tributary drainages to Hay Coulee, about 1/4 of a mile to the south and about 1/16 of a
mile to the west from this location
Water well contamination: No, closest water wells are about ½ of a mile to the south
southwest, about 5/8 of a mile to the north, about ¾ of a mile to the southwest and about
3/4 of a mile to the southeast from this location. Depth of these water wells range from 56'
to 290'. Surface hole will be drilled with freshwater and freshwater drilling fluids.
Surface casing will be set and cemented to surface from a depth of 1628'.
Porous/permeable soils: No, sandy clay soils.
Class I stream drainage: No Class I stream drainages
Mitigation:
X Lined reserve pit
_X Adequate surface casing
Berms/dykes, re-routed drainage
Closed mud system
Off-site disposal of solids/liquids (in approved facility)

Other: Comments:1628' of steel surface casing cemented to surface is adequate to
protect freshwater zones and cover the Fox Hills aquifer.
Soils/Vegetation/Land Use
(possible concerns)
Steam crossings: No, stream crossings anticipated.
High erosion potential: Yes, moderate cut, up to 14.5' and small fill, up to 6.6',
required
Loss of soil productivity: No, location will be restored after drilling, if nonproductive. If
productive unused portion of drillsite will be reclaimed.
Unusually large wellsite: Yes, large 500'X270' location size required.
Damage to improvements: No, slight.
Conflict with existing land use/values: Slight, surface use cultivated land.
Mitigation Avoid improvements (topographic tolerance)
Avoid improvements (topographic tolerance) Exception location requested
X Stockpile topsoil
Stream Crossing Permit (other agency review)
X_Reclaim unused part of wellsite if productive
Special construction methods to enhance reclamation
Other
Comments:Access will use existing county road, #330 and #141. About 70' of new
road will be built into location off the existing county road #141. Drill cuttings will be
disposed of in the lined reserve pit. Oil based invert drilling fluids will be recycled.
Completion fluids will be trucked to a commercial Class II disposal. Pit will be backfilled after remaining fluids have evaporated. No special concerns
arter remaining ridius have evaporated. No special concerns
Health Hazards/Noise
(possible concerns)
Proximity to public facilities/residences: None, no residences within 1 mile and further in
any direction from this well location
Possibility of H2S: Slight chance of H2S.
Size of rig/length of drilling time: Triple drilling rig/short 30 to 40 days drilling time
Mitigation:
_X_Proper BOP equipment
Topographic sound barriers
H2S contingency and/or evacuation plan
<ul><li>Special equipment/procedures requirements</li><li>Other:</li></ul>
Comments: Adequate surface casing and operational BOP equipment will
mitigate any issues.
Wildlife/recreation
(possible concerns)
Proximity to sensitive wildlife areas (DFWP identified): None identified.

Proximity to recreation sites:None identified. Creation of new access to wildlife habitat: No Conflict with game range/refuge management: None in the area. Threatened or endangered Species:Species identified as threatened by the USFWS are Pallid Sturgeon, Interior Lease Tern, Piping Plover and Whooping Crane. Species listed as candidate species are the Greater Sage Grouse and Sprague's Pipit. NH tracker website for this Township and Range lists only one (1) species of concern as the Whooping Crane.  Mitigation:
Avoidance (topographic tolerance/exception) Other agency review (DFWP, federal agencies, DSL) Screening/fencing of pits, drillsite Other: Comments: Private cultivated surface lands. There maybe species of
concern that maybe impacted by this wellsite. We ask the operator to consult with the surface owner as to what he would like done, if a species of concern is discovered at this location. The Board of Oil & Gas has no jurisdiction over private surface lands.
Historical/Cultural/Paleontological (possible concerns)
Proximity to known sites: None identified.  Mitigation  avoidance (topographic tolerance, location exception)  other agency review (SHPO, DSL, federal agencies)  Other:  Comments: On private cultivated surface lands. There maybe possible historical/cultural/paleontological sites that maybe impacted by this wellsite. We ask the
operator to consult with the surface owner as to his desires to preserve these sites or not, if they are found during construction of the wellsite. The Board of Oil & Gas has no jurisdiction over private surface lands.
Social/Economic
(possible concerns)  Substantial effect on tax base Create demand for new governmental services Population increase or relocation Comments: No concerns
Remarks or Special Concerns for this site
Well is a 19,987'MD/10,018'TVD, single lateral horizontal Bakken Formation well
Summary: Evaluation of Impacts and Cumulative effects
No long term impacts expected. Some short term surface impacts will occur.

impact statement. Prepared by (BOGC):\_Steven Sasaki \_\_\_\_\_ (title:) Chief Field Inspector\_ Date: \_December 21, 2011\_\_\_\_\_ Other Persons Contacted: Montana Bureau of Mines and Geology, GWIC website (Name and Agency) Richland County water wells (subject discussed) \_December 21, 2011\_ (date) US Fish and Wildlife, Region 6 website (Name and Agency) ENDANGERED, THREATENED, PROPOSED AND CANDIDATE SPECIES MONTANA COUNTIES, Richland County (subject discussed) November 19, 2011\_\_\_ (date) Montana Natural Heritage Program Website (FWP) (Name and Agency) Heritage State Rank= S1, S2, S3, T25N R55E (subject discussed) November 19, 2011 (date) If location was inspected before permit approval: Inspection date: \_\_\_\_\_

Others present during inspection:\_\_\_\_

Inspector: \_ \_

I conclude that the approval of the subject Notice of Intent to Drill (does/<u>does not</u>) constitute a major action of state government significantly affecting the quality of the human environment, and (does/<u>does not</u>) require the preparation of an environmental